

CLAIMS

1. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound, and hole blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the cathode, wherein hole blocking layer 1 contains a phosphorescent compound; and

a content of the phosphorescent compound contained in hole blocking layer 1 is in the range of 0.1 to 50% of a content of the phosphorescent compound contained in the light emitting layer.

2. The organic electroluminescent element of claim 1, wherein the organic electroluminescent element further comprises hole blocking layer 2 provided adjacent to hole blocking layer 1 and between hole blocking layer 1 and the cathode.

3. The organic electroluminescent element of claim 1, wherein the phosphorescent compound contained in the light emitting layer is the same as the phosphorescent compound contained in hole blocking layer 1.

4. The organic electroluminescent element of claim 1, wherein the phosphorescent compound contained in the light emitting layer is different from the phosphorescent compound contained in hole blocking layer 1.

5. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound, and electron blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the anode, wherein

electron blocking layer 1 contains a phosphorescent compound; and

a content of the phosphorescent compound contained in electron blocking layer 1 is in the range of 0.1 to 50% of a content of the phosphorescent compound contained in the light emitting layer.

6. The organic electroluminescent element of claim 5, wherein the organic electroluminescent element further comprises electron blocking layer 2 provided adjacent to electron blocking layer 1 and between electron blocking layer 1 and the anode.

7. The organic electroluminescent element of claim 5, wherein the phosphorescent compound contained in the light emitting layer is the same as the phosphorescent compound contained in electron blocking layer 1.

8. The organic electroluminescent element of claim 5, wherein the phosphorescent compound contained in the light emitting layer is different from the phosphorescent compound contained in electron blocking layer 1.

9. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound; hole blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the cathode; and electron blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the anode, wherein

hole blocking layer 1 contains a phosphorescent compound;

a content of the phosphorescent compound contained in hole blocking layer 1 is in the range of 0.1 to 50% of a content of the phosphorescent compound contained in the light emitting layer;

electron blocking layer 1 contains a phosphorescent compound; and

a content of the phosphorescent compound contained in electron blocking layer 1 is in the range of 0.1 to 50% of a content of the phosphorescent compound contained in the light emitting layer.

10. The organic electroluminescent element of claim 9, wherein the organic electroluminescent element further comprises hole blocking layer 2 provided adjacent to hole blocking layer 1 and between hole blocking layer 1 and the cathode.

11. The organic electroluminescent element of claim 9, wherein the organic electroluminescent element further comprises electron blocking layer 2 provided adjacent to

electron blocking layer 1 and between electron blocking layer 1 and the anode.

12. The organic electroluminescent element of claim 9, wherein the phosphorescent compound contained in the light emitting layer is the same as the phosphorescent compound contained in hole blocking layer 1.

13. The organic electroluminescent element of claim 9, wherein the phosphorescent compound contained in the light emitting layer is different from the phosphorescent compound contained in hole blocking layer 1.

14. The organic electroluminescent element of claim 9, wherein the phosphorescent compound contained in the light emitting layer is the same as the phosphorescent compound contained in electron blocking layer 1.

15. The organic electroluminescent element of claim 9, wherein the phosphorescent compound contained in the light emitting layer is different from the phosphorescent compound contained in electron blocking layer 1.

16. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound, and hole blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the cathode, wherein hole blocking layer 1 contains a phosphorescent compound so that an amount of light emitted from hole blocking layer 1 is

in the range of 0.1 to 50% of an amount of light emitted from the light emitting layer.

17. The organic electroluminescent element of claim 16, wherein the organic electroluminescent element further comprises hole blocking layer 2 provided adjacent to hole blocking layer 1 and between hole blocking layer 1 and the cathode.

18. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound, and electron blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the anode, wherein electron blocking layer 1 contains a phosphorescent compound so that an amount of light emitted from electron blocking layer 1 is in the range of 0.1 to 50% of an amount of light emitted from the light emitting layer.

19. The organic electroluminescent element of claim 18, wherein the organic electroluminescent element further comprises electron blocking layer 2 provided adjacent to electron blocking layer 1 and between electron blocking layer 1 and the anode.

20. An organic electroluminescent element comprising an anode and a cathode having therebetween a light emitting layer containing a phosphorescent compound; hole blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the cathode; and

electron blocking layer 1 provided adjacent to the light emitting layer and between the light emitting layer and the anode, wherein

hole blocking layer 1 contains a phosphorescent compound so that an amount of light emitted from hole blocking layer 1 is in the range of 0.1 to 50% of an amount of light emitted from the light emitting layer; and

electron blocking layer 1 contains a phosphorescent compound so that an amount of light emitted from electron blocking layer 1 is in the range of 0.1 to 50% of an amount of light emitted from the light emitting layer.

21. The organic electroluminescent element of claim 20, wherein the organic electroluminescent element further comprises hole blocking layer 2 provided adjacent to hole blocking layer 1 and between hole blocking layer 1 and the cathode.
22. The organic electroluminescent element of claim 20, wherein the organic electroluminescent element further comprises electron blocking layer 2 provided adjacent to electron blocking layer 1 and between electron blocking layer 1 and the anode.
23. The organic electroluminescent element of claim 1 emitting white light.
24. A display comprising the organic electroluminescent element of claim 1.

25. An illumination device comprising the organic electroluminescent element of claim 1.
26. A display comprising a liquid crystal cell and the illumination device of claim 25.
27. The organic electroluminescent element of claim 5 emitting white light.
28. A display comprising the organic electroluminescent element of claim 5.
29. An illumination device comprising the organic electroluminescent element of claim 5.
30. A display comprising a liquid crystal cell and the illumination device of claim 29.
31. The organic electroluminescent element of claim 9 emitting white light.
32. A display comprising the organic electroluminescent element of claim 9.
33. An illumination device comprising the organic electroluminescent element of claim 9.
34. A display comprising a liquid crystal cell and the illumination device of claim 33.

35. The organic electroluminescent element of claim 16 emitting white light.

36. A display comprising the organic electroluminescent element of claim 16.

37. An illumination device comprising the organic electroluminescent element of claim 16.

38. A display comprising a liquid crystal cell and the illumination device of claim 37.

39. The organic electroluminescent element of claim 18 emitting white light.

40. A display comprising the organic electroluminescent element of claim 18.

41. An illumination device comprising the organic electroluminescent element of claim 18.

42. A display comprising a liquid crystal cell and the illumination device of claim 41.

43. The organic electroluminescent element of claim 20 emitting white light.

44. A display comprising the organic electroluminescent element of claim 20.

45. An illumination device comprising the organic electroluminescent element of claim 20.

46. A display comprising a liquid crystal cell and the illumination device of claim 45.